



State of Utah
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

Michael O. Leavitt
Governor

Kathleen Clarke
Executive Director

Lowell P. Braxton
Division Director

1594 West North Temple, Suite 1210

PO Box 145801

Salt Lake City, Utah 84114-5801

801-538-5340

801-359-3940 (Fax)

801-538-7223 (TDD)

August 8, 2000

CERTIFIED RETURN RECEIPT
Z 230 748 230

Lon Thomas
Star Stone Quarries, Inc.
4040 South 300 West
Salt Lake City, Utah 84107

Re: Conditional Notice of Tentative Approval to Commence Large Mining Operations, Star Stone Quarries, Inc., Cotton Thomas Quarry, M/003/G24, Box Elder County, Utah

Dear Mr. Thomas:

The Division has completed a review of your latest response, received July 20, 2000, to our March 31, 2000 deficiency review letter. After reviewing this latest information, the Division *hereby grants its conditional tentative approval of the Cotton Thomas Quarry* large mining permit application. Upon your notification of acceptance of the following conditions, we will prepare and publish a formal notice of tentative approval in the appropriate Salt Lake City and Box Elder County newspapers. This will begin the required 30-day public comment period. If no substantive comments are received during the public comment period, the Division will then be prepared to issue its final approval for this project.

Prior to issuing final approval, a Reclamation Contract (Form MR-RC) must be completed and filed with this office. It must be attached to the reclamation surety for this project. The new reclamation surety amount is calculated at \$105,200 (year 2005 dollars). Please let us know which type of surety you propose to post so we can provide you with the appropriate form. Please provide us with a "draft" copy of the completed reclamation contract and surety form before they are finalized so we can review them for completeness and accuracy.

In issuing this tentative approval notice, *the following conditions and comments will apply:*

1. The NOI refers to a proposed access road to the north of the operations area of 4.7 miles in length (Map 4.1). Since the operator has yet to secure the necessary right-of-way, this will need to be amended to the plan at a later date. This proposed access route is *not* included as part of this approval. (LK)

2. The Division's review of the permit shows 66.32 acres to be developed (affected) by this permit. Reclamation will be required on 55.6 acres and variances from reclamation will be approved for 10.72 acres (see road variance discussion). (DJ & LK)
3. A variance was requested from *Rule R647-4-107.5 - Topsoil Salvage*. Map #4 shows quarry areas from which the operator feels topsoil can be salvaged (three inch depth). In addition, a proposed borrow area at the camp site (one foot depth) will provide sufficient topsoil material to cover quarry and dump areas at a depth of two inches. This, coupled with a soil amendment of 10 ton per acre of composted manure over the regraded 'fines' is expected to provide an adequate seedbed for successful revegetation. This variance *is approved* for quarry areas identified on Map #4 where topsoil is not planned for salvage.
4. A variance was requested from *Rule R647-4-111.7 - Highwall reduction*. This variance was previously *approved* to leave a 12-foot highwall at the Autumn Gold Quarry. (LK)
5. A variance was requested from *Rule R647-4-111.8 - Reclamation of all roads*. The operator has requested that several roads remain for post mining land use in conjunction with his ranching operation for the area. In reviewing this request, the Division considered reasonable access to the property in evaluating each road segment requested. This has resulted in three segments being acceptable for the post mining land use. The requested variance to leave the roads from the camp to the Autumn Gold quarry, from the Autumn Gold quarry to the Buckskin quarry, and from the Buckskin Quarry to the camp *is approved*. The requested variance to leave the roads to the Windridge Rubble quarry and the proposed extension to Mahogany Creek; the road from the Klondike Gold to the Star Quarry; the road between the camp and the Antique White quarry; the road connecting the Autumn Gold, Klondike Gold, and Aspen Frost quarries; and the roads from the Buckskin Quarry to the North, East, West and South Granite quarries is *not approved*. (LK)
6. The variance section continues to request variances for additional road segments without providing adequate justification for approval. Also, it contains requests for variances for potential roads that may be built in the future. The Division cannot consider variance requests for conceptual disturbance until a plan is submitted that provides the requisite detail for approval of the disturbances. When the Division approved the variances for the roads (from the camp, to the Autumn Gold, to the Buckskin, and returning to the camp), this was considered adequate access for the proposed post-mining land use of the property. *Please note*, if additional roads are *approved* and constructed, the Division will consider requiring reclamation of roads that currently have an approved variance before a variance may be granted to not reclaim the new roads. (The Division must look at the need of the road to approve the variance. A statement from the landowner requesting the road be left does not constitute a need. Several parallel roads from point 'a' to point 'b' are not likely to be approved.) (LK)

7. **R647-4-113 - Surety**

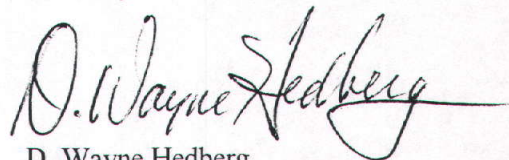
In recent discussions and correspondence with the operator, a request has been made to reduce the amount of reclamation surety that would need to be posted initially. The operator proposes to post a Certificate of Deposit (CD) as the form of reclamation surety. The CD would be calculated in current year dollars, with all interest to be added back onto the account balance. The annual accrued interest is intended to cover the standard 5-year escalation rate that the Division normally applies (up front) to the reclamation cost estimate. After considering this proposal the Division will accept the following:

- ▶ ***A \$93,000 Certificate of Deposit (in year 2001 dollars), which includes the 1st year escalation amount, using a 3.13% escalation factor.***

The CD will be set up so that all accrued interest is added back onto the account balance of the CD until the full \$105,200 five-year escalation amount, plus one term of interest, is achieved. Upon the CD's annual maturity/renewal date, the operator will be required to add supplemental funds, if necessary, so that the full escalated dollar amount for that year is covered (e.g., end of the first year, CD must be \$95,900; end of the second year, \$98,900; end of the third year, \$102,000; and end of the forth year, \$105,200). A copy of the reclamation cost estimate is attached.

If you have any questions or concerns regarding this conditional tentative approval notice, please contact me, Lynn Kunzler, or Joelle Burns within 5 days of your receipt of this notice. We can be reached at (801) 538-5286, 538-5310, or 538-5291, respectively. We will suspend making arrangements to publish the formal tentative approval public notice until we receive your notification of acceptance of this conditional tentative approval. Please note, if you fail to acknowledge acceptance of this notice by August 16, 2000, we will assume you agree with the conditions and will accordingly proceed to publish the formal notice of tentative approval. Thank you for your cooperation and patience in completing the permitting process for this project.

Sincerely,



D. Wayne Hedberg
Permit Supervisor
Minerals Regulatory Program

jb
Attachment: Surety Estimate
cc: Mike Ford, BLM
Pam Grubaugh-Littig, DOGM
Lynn Kunzler, DOGM
o:\thomas\M03-024.tent-apv

RECLAMATION SURETY ESTIMATE

STAR STONE QUARRIES, INC.

Cotton Thomas Operations

M/003/024

Prepared by Utah State Division of Oil, Gas & Mining

last revision

7-Aug-2000

filename m03-24.wb3

page "summary"

Box Elder County

THIS PAGE SUMMARIZES THE COSTS FROM THE INDIVIDUAL QUARRY ESTIMATE PAGES

Reclamation of surface rock removal areas will include ripping & broadcast seeding.

Other disturbed areas will receive a minimum 2 inches of topsoil, 10 ton/acre composted manure, & seed.

Areas which are granted a variance from reclamation requirements are listed below.

Other types of variances are described on individual site calculation pages.

-Amount of disturbed area which will receive reclamation treatments = 55.6 acres

-Estimated total disturbed area for this mine = 66.3 acres

MINE SITE OR FEATURE	disturbed acreage	reclamation variance acreage	acreage to be reclaimed	individual site estimates
ASPEN FROST QUARRY	5.00	0.00	5.00	\$5,478
KLONDIKE GOLD QUARRY	2.96	0.00	2.96	\$5,587
AUTUMN GOLD QUARRY	16.78	0.00	16.78	\$22,726
BUCKSKIN QUARRY	3.91	0.00	3.91	\$7,379
N, W, S, & EAST GRANITE QUARRIES	6.51	0.00	6.51	\$7,693
ANTIQUE W., LITTLE H. & WINDRIDGE R.	4.79	0.00	4.79	\$7,494
TOTAL ACCESS ROADS	24.71	9.06	15.65	\$14,295
CAMP AREA	1.66	1.66	0.00	\$0
ACREAGE TOTALS	66.32	10.72	55.60	

SUBTOTAL RECLAMATION COSTS \$70,653

	quantity	unit	\$/unit	\$
Equipment mobilization	5	equip	1,000	5,000
dozer, FE loader, trackhoe, truck, fuel/lube truck				
Reclamation Supervision	17	days	372	6,324
		Subtotal		81,977
10% Contingency				8,198
		Subtotal		\$90,174

	escalation	subtotals	Rounded Surety Amount
Escalate for 1 year at 3.13% per yr	\$2,822	\$92,997	\$93,000 (2001 dollars)
Escalate for 2 year at 3.13% per yr	\$5,733	\$95,908	\$95,900 (2002 dollars)
Escalate for 3 year at 3.13% per yr	\$8,735	\$98,909	\$98,900 (2003 dollars)
Escalate for 4 year at 3.13% per yr	\$11,831	\$102,005	\$102,000 (2004 dollars)
Escalate for 5 year at 3.13% per yr	\$15,024	\$105,198	\$105,200 (2005 dollars)

(5) DOGM general estimate - equipment mobilization

(7) Means 1999, 010-036-0180, project manager, minimum \$1,860/wk

note
(05)

(7)

RECLAMATION SURETY ESTIMATE

STAR STONE QUARRIES, INC

Cotton Thomas Operations

M/003/024

Prepared by Utah State Division of Oil, Gas & Mining

Revision

7-Aug-2000

filename m03-24.wb3

page "aspen frost"

Box Elder County

THIS PAGE IS FOR RECLAMATION TASKS AT THE ASPEN FROST QUARRY ONLY.

ACCESS ROADS ARE NOT INCLUDED IN THIS CALCULATION PAGE.

This page includes reclamation of 1.7 acres of surface rock removal listed as "casual use."

Reclamation of surface rock removal areas will include ripping & broadcast seeding.

Reclamation of other areas: min. 2 inches topsoil, 10 ton/acre composted manure, broadcast seed.

Equipment mobilization & supervision are included in the summary page only.

Total disturbed area (3.3 + 1.7) = 5.00 acre total disturbance

Topsoil coverage for 3.30 acres requiring topsoil

Calculated soil volume for minimum cover 2 inch depth => 887.3 CY

Calculated waste fines for 16" cover on 25% excavation area=> 1,774.7 CY

Assumed 30% of calculated topsoil volume is from the camp borrow site & 70% at the quarry

Dump regrading assumed as moving volume of fines to cover quarry excavation with 16 inch depth

-Amount of disturbed area which will receive reclamation treatments = 5.0 acres

-Estimated total disturbed area for this mine = 5.0 acres

Activity	Quantity	Units	\$/unit	\$	Note
Regrading waste dump fines onto quarry	1,775	CY	0.82	1,455	(1)
Ripping waste dump tops - (50% topsoil area)	1.7	acre	220	363	(2)
Ripping surface rock removal area	1.7	acre	220	374	(2)
Topsoil spreading - dozer (70% total vol)	621	CY	0.64	398	(3)
Topsoil haulage - truck & FE loader (30%)	266	CY	3.47	924	(4)
Composted manure (10 ton/acre)	3.3	acre	300	990	(01)
Broadcast seeding	5.0	acre	170	850	(02)
General site cleanup & trash removal (50% total area)	2.5	acre	50	125	(03)
Subtotal				\$5,478	
Average cost per disturbed acre =		\$1,096			

Note

- (1) Means 1999 & Blue Book 3Q/99: Cat D8N, U, mtl 2550 lb/CY, 200 ft push
- (2) Means 1999 & Blue Book 3Q/99: Cat D8N, U, multi shank rippers, speed 1.0 mph
- (2) Means 1999 & Blue Book 3Q/99: Cat D8N, U, multi shank rippers, speed 1.0 mph
- (3) Means 1999 & Blue Book 3Q/99: Cat D8N, U, mtl 2550 lb/CY, 150ft push
- (4) Means 1999 022-266-2040: hauling excavated or borrow material, off highway hauler, 22 CY, 2 mi round trip, no loading included \$3.01/CY + DOGM FE load cost \$0.46/CY
- (01) DOGM general estimate - manure \$16/ton delivered, \$14 ton/acre spreading
- (02) DOGM general estimate - broadcast seeding
- (03) DOGM general estimate - site cleanup & trash removal

RECLAMATION SURETY ESTIMATE

STAR STONE QUARRIES, INC

Cotton Thomas Operations

M/003/024

Prepared by Utah State Division of Oil, Gas & Mining

last revision

7-Aug-2000

filename m03-24.wb3

page "klondike gold"

Box Elder County

THIS PAGE IS FOR RECLAMATION TASKS AT THE KLONDIKE GOLD QUARRY ONLY.

ACCESS ROADS ARE NOT INCLUDED IN THIS CALCULATION PAGE.

This page includes reclamation of 0.00 acres of surface rock removal listed as "casual use."

Reclamation of surface rock removal areas will include ripping & broadcast seeding.

Reclamation of other areas: min. 2 inches of topsoil, 10 ton/acre composted manure, broadcast se

Equipment mobilization & supervision are included in the summary page only.

Total disturbed area = 2.96 acres of total disturbance

Topsoil coverage for 2.96 acres requiring topsoil

Calculated soil volume for minimum cover 2 inch depth => 795.9 CY

Calculated waste fines for 16" cover on 50% excavation area=> 3,183.6 CY

Assumed 30% of calculated topsoil volume is from the camp borrow site & 70% at the quarry

Dump regrading assumed as moving volume of fines to cover quarry excavation with 16 inch dept

-Amount of disturbed area which will receive reclamation treatments 2.96 acres

-Estimated total disturbed area for this mine = 2.96 acres

Activity	Quantity	Units	\$/unit	\$	Note
Regrading waste dump fines onto quarry	3,184	CY	0.82	2,611	(1)
Ripping waste dump tops - (50% topsoil area)	1.48	acre	220	326	(2)
Ripping surface rock removal area	0.00	acre	220	0	(2)
Topsoil spreading - dozer (70% total vol)	557	CY	0.64	357	(3)
Topsoil haulage - truck & FE loader (30%)	239	CY	3.47	829	(4)
Composted manure (10 ton/acre)	2.96	acre	300	888	(01)
Broadcast seeding	2.96	acre	170	503	(02)
General site cleanup & trash removal(50% total area)	2.96	acre	50	74	(03)
Subtotal				\$5,587	
Average cost per disturbed acre =		\$1,887			

Note

- (1) Means 1999 & Blue Book 3Q/99: Cat D8N, U, mtl 2550 lb/CY, 200 ft push
- (2) Means 1999 & Blue Book 3Q/99: Cat D8N, U, multi shank rippers, speed 1.0 mph
- (2) Means 1999 & Blue Book 3Q/99: Cat D8N, U, multi shank rippers, speed 1.0 mph
- (3) Means 1999 & Blue Book 3Q/99: Cat D8N, U, mtl 2550 lb/CY, 50 ft push
- (4) Means 1999 022-266-2040: hauling excavated or borrow material, off highway hauler, 22 CY, 2 mi round trip, no loading included \$3.01/CY + DOGM FE load cost \$0.46/CY
- (01) DOGM general estimate - manure \$16/ton delivered, \$14 ton/acre spreading
- (02) DOGM general estimate - broadcast seeding
- (03) DOGM general estimate - site cleanup & trash removal

RECLAMATION SURETY ESTIMATE

STAR STONE QUARRIES, INC

Cotton Thomas Operations

M/003/024

Prepared by Utah State Division of Oil, Gas & Mining

last revision

7-Aug-2000

filename m03-24.wb3

page "autumn gold"

Box Elder County

THIS PAGE IS FOR RECLAMATION TASKS AT THE AUTUMN GOLD QUARRY ONLY.
ACCESS ROADS ARE NOT INCLUDED IN THIS CALCULATION PAGE.

This page includes reclamation of 6.1 acres of surface rock removal listed as "casual use."

Reclamation of surface rock removal areas will include ripping & broadcast seeding.

Reclamation of other areas: 2 inches of topsoil, 10 ton/acre composted manure, broadcast seed.

Equipment mobilization & supervision are included in the summary page only.

Total disturbed area (10.7 + 6.1) = 16.8 acres total disturbance

Topsoil coverage for 10.7 acres requiring topsoil

Calculated soil volume for minimum cover 2 inch depth => 2,877.1 CY

Calculated waste fines for 16" cover on 50% excavation area=> 11,508.4 CY

Assumed 30% of calculated topsoil volume is from the camp borrow site & 70% at the quarry.

Dump regrading assumed as moving volume of fines to cover quarry excavation with 16 inch dep

Previous variance granted by the Division to allow 12 ft highwalls to remain.

Previous variance granted by the Division did not require topsoil salvage at the quarry excavation

-Amount of disturbed area which will receive reclamation treatments 16.8 acres

-Estimated total disturbed area for this mine = 16.8 acres

Activity	Quantity	Units	\$/unit	\$	Note
Regrading waste dump fines onto quarry	11,508	CY	0.82	9,437	(1)
Ripping waste dump tops - (50% topsoil area)	5.4	acre	220	1,177	(2)
Ripping surface rock removal area	6.1	acre	220	1,342	(2)
Topsoil spreading- dozer (70% total vol)	2,014	CY	0.64	1,289	(3)
Topsoil haulage - truck & FE loader (30%)	863	CY	3.47	2,995	(4)
Composted manure (10 ton/acre)	10.7	acre	300	3,210	(01)
Broadcast seeding	16.8	acre	170	2,856	(02)
General site cleanup & trash removal (50% total area)	8.4	acre	50	420	(03)
Subtotal				\$22,726	
Average cost per disturbed acre =		\$1,353			

Note

- (1) Means 1999 & Blue Book 3Q/99: Cat D8N, U, mtl 2550 lb/CY, 200 ft push
- (2) Means 1999 & Blue Book 3Q/99: Cat D8N, U, multi shank rippers, speed 1.0 mph
- (2) Means 1999 & Blue Book 3Q/99: Cat D8N, U, multi shank rippers, speed 1.0 mph
- (3) Means 1999 & Blue Book 3Q/99: Cat D8N, U, mtl 2550 lb/CY, 150 ft push
- (4) Means 1999 022-266-2040: hauling excavated or borrow material, off highway hauler, 22 CY, 2 mi round trip, no loading included \$3.01/CY + DOGM FE load cost \$0.46/CY
- (01) DOGM general estimate - manure \$16/ton delivered, \$14 ton/acre spreading
- (02) DOGM general estimate - broadcast seeding
- (03) DOGM general estimate - site cleanup & trash removal

RECLAMATION SURETY ESTIMATE

STAR STONE QUARRIES, INC

Cotton Thomas Operations

M/003/024

Prepared by Utah State Division of Oil, Gas & Mining

last revision

7-Aug-2000

filename m03-24.wb3

page "buckskin"

Box Elder County

THIS PAGE IS FOR RECLAMATION TASKS AT THE BUCKSKIN QUARRY ONLY.

ACCESS ROADS ARE NOT INCLUDED IN THIS CALCULATION PAGE.

This page includes reclamation of 0.00 acres of surface rock removal listed as "casual use."

Reclamation of other areas: 2 inches of topsoil, 10 ton/acre composted manure, broadcast seed.

Equipment mobilization & supervision are included in the summary page only.

Total disturbed area = 3.91 acres total disturbance

Topsoil coverage for 3.91 acres requiring topsoil

Calculated soil volume for minimum cover 2 inch depth => 1,051.4 CY

Calculated waste fines for 16" cover on 50% excavation area=> 4,205.4 CY

Assumed 30% of calculated topsoil volume is from the camp borrow site & 70% at the quarry.

Dump regrading assumed as moving volume of fines to cover quarry excavation with 16 inch depth.

-Amount of disturbed area which will receive reclamation treatments = 3.9 acres

-Estimated total disturbed area for this mine = 3.9 acres

Activity	Quantity	Units	\$/unit	\$	Note
Regrading waste dump fines onto quarry	4,205	CY	0.82	3,448	(1)
Ripping waste dump tops - (50% topsoil area)	1.96	acre	220	430	(2)
Ripping casual use stone removal area	0.00	acre	220	0	(2)
Topsoil spreading - dozer (70% total volume)	736	CY	0.64	471	(3)
Topsoil replacement - truck & FE loader(30%)	315	CY	3.47	1,094	(4)
Composted manure (10 ton/acre)	3.91	acre	300	1,173	(01)
Broadcast seeding	3.91	acre	170	665	(02)
General site cleanup & trash removal (50% total area)	1.96	acre	50	98	(03)
Subtotal				\$7,379	
Average cost per disturbed acre =		\$1,887			

Note

- (1) Means 1999 & Blue Book 3Q/99: Cat D8N, U, mtl 2550 lb/CY, 200 ft push
- (2) Means 1999 & Blue Book 3Q/99: Cat D8N, U, multi shank rippers, speed 1.0 mph
- (2) Means 1999 & Blue Book 3Q/99: Cat D8N, U, multi shank rippers, speed 1.0 mph
- (3) Means 1999 & Blue Book 3Q/99: Cat D8N, U, mtl 2550 lb/CY, 150 ft push
- (4) Means 1999 022-266-2040: hauling excavated or borrow material, off highway hauler, 22 CY, 2 mi round trip, no loading included \$3.01/CY + DOGM FE load cost \$0.46/CY
- (01) DOGM general estimate - manure \$16/ton delivered, \$14 ton/acre spreading
- (02) DOGM general estimate - broadcast seeding
- (03) DOGM general estimate - site cleanup & trash removal

RECLAMATION SURETY ESTIMATE

STAR STONE QUARRIES, INC

Cotton Thomas Operations

M/003/024

Prepared by Utah State Division of Oil, Gas & Mining

last revision

7-Aug-2000

filename m03-24.wb3

page "4_granite_Qs"

Box Elder County

THIS PAGE IS FOR RECLAMATION TASKS AT THE N, W, S & EAST GRANITE QUARRIES
ACCESS ROADS ARE NOT INCLUDED IN THIS CALCULATION PAGE.

This page includes reclamation of 0.00 acres of surface rock removal listed as "casual use."

Reclamation of surface rock removal areas will include ripping & broadcast seeding.

Reclamation of other areas: 2 inches of topsoil, 10 ton/acre composted manure, broadcast s

Equipment mobilization & supervision are included in the summary page only.

Total disturbed area $(3.52+0.47+0.40+2.12) =$ 6.51 acres total disturbance

Topsoil coverage for 6.51 acres requiring topsoil

Calculated soil volume for minimum cov 2 inch depth => 1,750.5 CY

Calculated waste fines for 16" cover on 10% excavation area=> 1,400.4 CY

Assumed 30% of calculated topsoil volume is from the camp borrow site & 70% at the quarry

Dump regrading assumed as moving volume of fines to cover quarry excavation with 16 inch

-Amount of disturbed area which will receive reclamation treatment 6.5 acres

-Estimated total disturbed area for this mine = 6.5 acres

Activity	Quantity	Units	\$/unit	\$	Note
Regrading waste dump fines onto quarry	1,400	CY	0.82	1,148	(1)
Ripping waste dump tops - (50% topsoil area)	3.26	acre	220	716	(2)
Ripping casual use stone removal area	0.00	acre	220	0	(2)
Topsoil spreading - dozer (70% total vol)	1,225	CY	0.64	784	(3)
Topsoil haulage - truck & FE loader(30%)	525	CY	3.47	1,822	(4)
Composted manure (10 ton/acre)	6.51	acre	300	1,953	(01)
Broadcast seeding	6.51	acre	170	1,107	(02)
General site cleanup & trash removal(50% total ar	3.26	acre	50	163	(03)
Subtotal				\$7,693	
Average cost per disturbed acre =		\$1,182			

Note

- (1) Means 1999 & Blue Book 3Q/99: Cat D8N, U, mtl 2550 lb/CY, 200 ft push
- (2) Means 1999 & Blue Book 3Q/99: Cat D8N, U, multi shank rippers, speed 1.0 mph
- (2) Means 1999 & Blue Book 3Q/99: Cat D8N, U, multi shank rippers, speed 1.0 mph
- (3) Means 1999 & Blue Book 3Q/99: Cat D8N, U, mtl 2550 lb/CY, 150 ft push
- (4) Means 1999 022-266-2040: hauling excavated or borrow material, off highway hauler, 22 CY, 2 mi round trip, no loading included \$3.01/CY + DOGM FE load cost \$0.46/CY
- (01) DOGM general estimate - manure \$16/ton delivered, \$14 ton/acre spreading
- (02) DOGM general estimate - broadcast seeding
- (03) DOGM general estimate - site cleanup & trash removal

RECLAMATION SURETY ESTIMATE

STAR STONE QUARRIES, INC

Cotton Thomas Operations

M/003/024

Prepared by Utah State Division of Oil, Gas & Mining

last revision

7-Aug-2000

filename m03-24.wb3

page "3 Qs"

Box Elder County

RECLAMATION TASKS AT THE ANTIQUE WHITE, LITTLE HEART & WINDRIDGE RUBBLE
ACCESS ROADS ARE NOT INCLUDED IN THIS CALCULATION PAGE.

This page includes reclamation of 0.87 +0.80 acres of surface rock removal listed as "casual use."

Reclamation of surface rock removal areas will include ripping & broadcast seeding.

Reclamation of other areas: 2 inches of topsoil, 10 ton/acre composted manure, broadcast seed.

Equipment mobilization & supervision are included in the summary page only.

Total disturbed area (1.74+1.13+0.87+0.80 +0.25)= 4.79 acres total disturbance

Topsoil coverage for 3.74 acres requiring topsoil

Calculated soil volume for minimum cover 2 inch depth => 1,005.6 CY

Calculated waste fines for 16" cover on 50% excavation area=> 4,022.6 CY

Assumed 30% of calculated topsoil volume is from the camp borrow site & 70% at the quarry.

Dump regrading assumed as moving volume of fines to cover quarry excavation with 16 inch depth

-Amount of disturbed area which will receive reclamation treatments = 4.8 acres

-Estimated total disturbed area for this mine = 4.8 acres

Activity	Quantity	Units	\$/unit	\$	Note
Regrading waste dump fines onto quarry	4,023	CY	0.82	3,299	(1)
Ripping waste dump tops - (50% topsoil area)	1.87	acre	220	411	(2)
Ripping surface rock removal areas	1.05	acre	220	231	(2)
Topsoil spreading - dozer(70% total vol)	704	CY	0.64	451	(3)
Topsoil haulage - truck & FE loader(30%)	302	CY	3.47	1,047	(4)
Composted manure (10 ton/acre)	3.74	acre	300	1,122	(01)
Broadcast seeding	4.79	acre	170	814	(02)
General site cleanup & trash removal (50% total area)	2.40	acre	50	120	(03)
		Subtotal		\$7,494	
Average cost per disturbed acre =	\$1,565				

Note

- (1) Means 1999 & Blue Book 3Q/99: Cat D8N, U, mtl 2550 lb/CY, 200 ft push
(2) Means 1999 & Blue Book 3Q/99: Cat D8N, U, multi shank rippers, speed 1.0 mph
(2) Means 1999 & Blue Book 3Q/99: Cat D8N, U, multi shank rippers, speed 1.0 mph
(3) Means 1999 & Blue Book 3Q/99: Cat D8N, U, mtl 2550 lb/CY, 150 ft push
(4) Means 1999 022-266-2040: hauling excavated or borrow material, off highway hauler, 22 CY, 2 mi round
(01) DOGM general estimate - manure \$16/ton delivered, \$14 ton/acre spreading
(02) DOGM general estimate - broadcast seeding
(03) DOGM general estimate - site cleanup & trash removal

RECLAMATION SURETY ESTIMATE

STAR STONE QUARRIES, INC

Cotton Thomas Operations

M/003/024

last revision

7-Aug-2000

filename m03-24.wb3

page "cotton roads"

Box Elder County

Prepared by Utah State Division of Oil, Gas & Mining

THIS PAGE IS FOR RECLAMATION TASKS FOR ACCESS ROADS ONLY

Road disturbances to receive 5 ton/acre of composted manure.

Road disturbances will not receive additional topsoil placement.

Equipment mobilization & supervision are included in the summary page only.

Road reclamation includes ripping or regrading, composted manure & seeding unless stated otherwise

Approximately 1.0 mile x 16 ft road (1.93 acre) is expected to require trackhoe regrading.

ROAD DESCRIPTION	mileage	width(ft)	acreage	variance
------------------	---------	-----------	---------	----------

to Little Heart Quarry	0.17	16	0.33	no
to Aspen Frost Quarry	0.23	16	0.45	no
from Camp to Antique White Quarry	0.37	14	0.63	no
to Windridge Quarry	0.56	16	1.09	no
from Camp to Klondike Gold Quarry	0.73	14	1.24	no
from Camp to Klondike Gold Quarry	0.96	16	1.86	no
from Buckskin Quarry to West Granite Quarry	1.06	16	2.06	no
to East Granite Quarry	1.09	18	2.38	2.38
from Autumn Gold Quarry to Buckskin Quarry	1.21	17	2.49	2.49
to Buckskin Quarry	1.73	20	4.19	4.19
Antique White Quarry to Autumn Gold Quarry	1.00	18	2.18	no
beyond North Granite Quarry	0.19	16	0.37	no
between Klondike Gold & Star Quarry (unapproved)	0.83	20	2.01	no
proposed between Buckskin & N Granite (along ridg	1.22	18	2.66	no
proposed from Windridge to Mahogany Draw	0.4	16	0.78	no

Total road disturbance 24.71

Road disturbance granted a variance from reclamation 9.06

Road disturbance being reclaimed 15.65

Road disturbance requiring trackhoe work 1.93

Road disturbance requiring dozer ripping 13.72

-Amount of road disturbance which will receive reclamation treatments 13.72 acres

-Estimated total road disturbed area for this mine = 24.71 acres

Activity	Quantity	Units	\$/unit	\$	Note
Ripping access roads - dozer	13.72	acre	220	3,019	(2) Means
Regrading access roads - dozer	0.00	acre	470	0	(5) Means
Sidecast mtl replacement on steep roads- trackhoe	5,280	LF	1.07	5,650	(6) Contract
Composted manure - roads (5 ton/acre)	15.65	acre	150	2,348	(04) DOGM
Broadcast seeding	15.65	acre	170	2,661	(02) DOGM
General site cleanup & trash removal (50% total area)	12.36	acre	50	618	(03) DOGM
		Subtotal		\$14,295	
Average cost per disturbed acre =	\$578				

Note

- (2) Means 1999 & Blue Book 3Q/99: Cat D8N, U, multi shank rippers, speed 1.0 mph
- (5) Means 1999 & Blue Book 4/98: Cat D8N, U, mtl 2550 lb/CY, 50 ft push, 1 ft depth
- (6) Contractor's actual costs, 1991 at E/053/012, Cat 225 Excavator, 20 ft wide road \$0.85/LF cost escalated to 1999 as \$1.07/LF
- (04) DOGM general estimate - manure \$16/ton delivered, \$14 ton/acre spreading
- (02) DOGM general estimate - broadcast seeding
- (03) DOGM general estimate - site cleanup & trash removal